From: PETERSON Jenn L
To: Robert W. Gensemer; Burt Shephard/R10/USEPA/US@EPA; Joe Goulet/R10/USEPA/US@EPA
Cc: Jeremy_Buck@fws.gov; Eric Blischke/R10/USEPA/US@EPA
Subject: FW: Refined screen
Date: 02/07/2008 09:32 PM

Bob (and others),

I think what you were asking for this morning was some language around the application of refined screen procedure 3 to media like water. I think in general we need to move some of the language in refined screen 4 up here such as "exposure point concentrations of environmental media and prey to which receptors are exposure will be recalculated on appropriately sized segments", which was discussed on the call. We should then refer them directly to the exposure table, which I do think has a refined screen built in (e.g. ATC, then probabalistic). We may need to expand on the concepts in the exposure tables in a general sense so that they link together logically. Now that I am looking at it, 1 and 3 may be void when we do this, since these methods were originally developed for site wide assessments (not site wide with several different sources). This may apply more to wildlife, but we have specified what they need to do in the exposure tables, and as it is now I think it is contradictory.

I think we can keep number 2 if we specify it only for sediment. I have not seen it applied to anything other than sediment and this would solve the water problem or other media for which we don't have many samples. I think if you apply it beyond sediment (e.g. comparison to SQGs) it is really going to become complicated and receptor specific that really needs the specificity of the exposure table. I also don't see any media other than sediment that would occur over a fine enough scale to get 3 contiguous samples for screening relevant to receptor scale except maybe TZW off a site, but that may have other issues.

In the first paragraph I would change "if the sitewide detection frequency of the COPC is less than 5%..." to "if the receptor area specific environmental media and prey have a detection frequency of the COPC less than 5%...". This should set the stage that the refined screen evaluations should be over the appropriate scale. This should also link to the exposure tables.

Number 3: I am not sure what to do with this relative to the exposure tables. Take it out?

No easy fix - I think it may need a bit of a conceptual re-write. Let me know whay you guys want to do - I can work on it if necessary.

-Jennifer

-----Original Message-----
From: Blischke.Eric@epamail.epa.gov
[mailto:Blischke.Eric@epamail.epa.gov]
Sent: Wednesday, February 06, 2008 3:53 PM
To: PETERSON Jenn L
Subject: Fw: Refined screen

Here are Burt's comments.

Eric
----- Forwarded by Eric Blischke/R10/USEPA/US on 02/06/2008 03:52 PM -----

Burt Shephard/R10/USEPA/US 02/06/2008 01:11 PM		To: rgensemer@parametrix.com cc: Joe Goulet/R10/USEPA/US@EPA, Eric Blischke/R10/USEPA/US@EPA Subject: Refined screen

Bob,

Got called into a meeting on another project with my supervisor right after we got off the phone earlier this AM, then had the UCR site presentation. Back in the office, I'll write up my comments on the refined screen here.

COPECs that screen out anywhere in the EcoRA process can be put back into later stages of the assessment if data warrant doing so. Thus, the EcoRA does not have to always be a one way process. The two most common reasons for adding in something already screened out are new

data that show elevated contaminant concentrations above benchmarks or TRVs, or new toxicity data that lowers a benchmark or TRV previously used. We won't have much more new data, just the samples for sediment, tissue and toxicity testing already in the pipeline from previously approved FSPs. This is a general caveat that applies to all tiers of a risk assessment, recommend putting it into the introductory text of the refined screen to add to the comfort level of everyone.

Don't rule out quantitative evaluation of chemicals without TRVs. There are two parts to this comment. One is that quantitative evaluation is only ruled out for the specific medium, receptor or pathway for which a TRV doesn't exist. Example: we don't have a water column TRV for 1,2-dimethyldoorknob, but we do have a sediment TRV for 1,2-dimethyldoorknob, the quantitative screen only can't be performed for water. We can still quantify risks in sediment. This is clarification text, not a big deal. The second part is that chemicals without TRVs in any media, such as total petroleum hydrocarbons, can still have risks quantified in other lines of evidence, such as toxicity tests or the sediment predictive models, if TPH shows up as a driver of toxicity in those lines of evidence.

Take out text in several parts of the refined screen referring to sitewide mean concentrations for surface water, seeps and transition zone water. These media are evaluated for risks on a point by point basis.

Chemicals with detection limits greater than the TRV, where risks cannot be quantified, are still carried through as COPECs. Thought I had already covered this one, but maybe it needs clarified. Perhaps we should direct LWG to list these chemicals out a separate table, so they don't get lost?

Refined screen 4 (reevaluation of receptor site use and area use factors) should not be applied to surface water.

Nutritionally essential metals. For any metals that are identified at, but not exceeding nutritionally essential levels, the metal is eliminated only for that receptor, receptor group or medium. It will not be eliminated for all receptors and media. This is a point of clarification and specificity.

Background: I'm going to give you some specific text here to replace or amend some of what I previously wrote up, to explicitly capture what EPA can and cannot do legally, and to describe our policy in handling background. I don't have a problem pulling background out of the refined screen and having it as a standalone section, but do think it should be before the AE/risk question/ME section. This is because the risk assessments I've seen that have done the best job of describing background risks carry them through separately in risk characterization, in their own tables, not lumped in with all the other COPEC discussions in risk characterization. That way the separation is maintained that background chemicals can pose risks (as per EPA policy dictate), but that such chemicals will not be the basis for site remediation (as is required in law by CERCLA). If this is an issue for Portland Harbor, lets identify the background chemicals/media/tissues earlier in the process, rather than at the end of the EcoRA risk characterization.

Text to add in is the following:

EPA by law is precluded from basing site remediation on naturally occurring chemicals occurring at naturally occurring concentrations, even if those concentrations exceeds an ARAR, toxicity reference value or other toxicity benchmark. Section 104(3)(A) of CERCLA states "The President shall not provide for a removal or remedial action under this section in response to a release or threat of a release of a naturally occurring substance in its unaltered form, or altered solely through naturally occurring processes or phenomena, from a location where it is naturally found." It is clear from this provision of CERCLA that Congress recognized that remediating naturally occurring background chemicals to levels below background concentrations is not practical, even if the background concentration poses unacceptable risks. EPA risk assessment policy (described in Appendix B of EPA 2002 i.e the EPA background guidance document I gave you the reference for earlier) recommends that baseline risk assessments retain chemicals that exceed risk-based screening concentrations. The approach involves addressing site-specific background issues at the end of the risk assessment, in the risk characterization step. Specifically, the COPCs with background concentrations that exceed a risk-based screening concentration or TRV should be discussed in the risk characterization. If data are available, the contribution of background to site concentrations should be distinguished. COPCs that have both release-related and background-related sources should be included in the risk assessment. When concentrations of naturally occurring elements at a site exceed risk-based screening levels, that information should be discussed qualitatively in the risk characterization.

For the Portland Harbor site, EPA believes it is to the benefit of all parties to identify as early in the RI/FS process as possible those naturally occurring chemicals that are at background levels, and thus will not be the basis for remediation at the site. To be consistent with EPA policy requirements, ecological risks from naturally occurring chemicals at background concentrations must be identified in the BERA. This discussion of background in the refined screen is therefore more of a remedy selection screen than it is a risk assessment screen. Naturally occurring chemicals found in site media at concentrations that can be demonstrated to occur at, but not in excess of naturally occurring concentrations should be carried through the BERA unless or until they screen out based on other measurement endpoints and lines of evidence in the BERA. No naturally occurring COPCs will be eliminated from evaluation in the BERA solely because they are in the range of naturally occurring concentrations. EPA recommends, however, that any naturally occurring COPCs at background concentrations, including any ecological risks from such chemicals, be discussed and tabulated separately from all other chemicals evaluated in the BERA, and, to the extent possible, be identified as part of the refined screen of the BERA.

Best regards,

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"If your experiment needs statistics to analyze the results, then you ought to have done a better experiment"
- Ernest Rutherford